

REMARKS

Reconsideration and allowance of this application are respectfully requested.

Claims 1, 2 and 47-49 are rejected under 35 U.S.C. 102 as anticipated by the reference to Funamoto et al. U.S. Patent No. 6,213,381 for the reasons indicated at item 2 of the patent Office Action. Additionally, the "Response to Arguments" section item number 3 on page 3 indicates that Applicants previous arguments concerning Funamoto et al. were not persuasive because those arguments were not commensurate with the scope of the claims.

Applicants respectfully submit that previously presented arguments addressed improvements brought about by features that were not available from the references. However, as the rejection is an anticipatory rejection under 35 U.S.C. 102 the following discussion will be addressed to features of independent claims 1, 2, 47 and 49 not shown or disclosed by Funamoto et al. '381.

Independent claim 1 requires that there are first and second shearing blades which function by "moving the first and second shearing blades so as to sandwich the overlapped portions". Additionally, the bonded portions is recited as being formed "in an oblique direction inclined with respect to thickness direction of the metal plate". Independent claim 49 provides a process whereby the blades are moved in opposing directions to avoid deformation of the metal plate and the bonded portion is formed in a oblique direction inclined with respect to the thickness direction of the metal plate. Independent claim 47

recites that the bonded surface is formed in an oblique direction inclined with respect to the thickness direction of the metal plates.

The above claim features, which define Applicants invention, are not available from the reference to Funamoto et al. In a first instance, Applicants respectfully submit that there is no movement of two separate blades and therefore also no movement in opposite directions. It is submitted that the reference to Funamoto et al. moves only one blade with the other blade being a support blade. The Examiner's rejection indicated that the "first and second shearing blades are moving in opposite direction shown in Figures 11a and 11b". Applicants submit that only one blade, which is the blade 8 in Figure 11a, is moved. Blade 9 is a supporting blade. Column 18, lines 41 to 44 indicates that "a large pushing force is generated in the bonded surface during the process where the shearing blade 8 is pushed against the metal plates 2".

The second matter to be considered is the Examiner's rejection based upon a statement that "the bonded portion and/or bonded surface is formed in a oblique direction inclined, less than 75°, with respect to the thickness direction on the metal shapes as shown in (Figures column 21, lines 20-36)". Applicants submit that the oblique angle shown in Figure 20 which is discussed at column 21, lines 20-36 of Funamoto et al. relates to the angle of the shearing blade which is not the "bonded portion" of the claimed invention. That is, each of independent claims 1, 47 and 49 recite that "the bonded portion or bonded surface of the bonded portion is formed in a oblique direction inclined with respect to the thickness direction of the metal plates". The bonding portion is a part of the final

product or the final single plate that remains, as for example, the item 13 in Figure 2 of Applicants invention. The bonded portion is the portion between the two segments that make up the final product. As can be seen from Applicants Figures 3, 5, 8 and 9, this bonded portion is clearly inclined with respect to the thickness direction. In contrast, none of the figures of Funamoto et al. provide any indication of an inclined bonded portion when two metal plates are bonded. The referred to discussion of Figure 20 at column 21, lines 20-36 relates that the plate 36 has an inclined surface, however the bonded portion, after the combination, is not indicated as being oblique. In fact, the dotted portion of the cutting of the bars 26 and 27 indicates that the cutting takes place in the same direction as the thickness.

Applicants' inclination angle Θ_J of the bonded portion functions to improved fracture strength of the bonded portion, as discussed at page 22. This improved fracture strength is a result of the patentable oblique angle of the bonded portion.

Therefore, there are distinguishing features which exist in each of independent claims 1, 47 and 49 and these features are not available or disclosed by Funamoto et al. Additionally, existence of these features provide an improvement in such operations as is discussed in the Background of the Invention and throughout the specification so that these distinctive features are related to improvements over prior art devices.

The features which distinguish the present invention, as claimed, and as discussed above, are not obvious variation as they are specifically addressed to numerous advantageous over the prior art. That is, the presently claimed invention allows for the achievement of a sufficient bonding strength in a short period of time while minimizing bending of the bonded metal plates. Furthermore, it allows for shortening of the remaining crop after bonding and improves the material moveability as discussed in the Summary of the Invention at pages 3-11. More particularly, page 10 discusses that the time required for bonding is shortened due to the upper and lower shearing blades and the large pressure force so that the bonding process by the shearing blades can be realized and synchronism with the bar movement and hence smooth bonding is accomplished.

Additionally the remaining crop being shortened allows for the yield of the material to be improved because the overlapping mechanism increases the following bar speed and overlap of the two bars when the trailing end of the preceding has reached a specified position and the return of the bar speed to the original speed when the overlap portion has reached a specified length. This allows for the apparatus to crop with the differences in rolling speed. The overlap portion includes a specified portion on either the preceding or the following bar which was previously required to be thrown away, and which can now be used as a crop after bonding.

The amendment to page 22 inserts the word "required" to provide a more clear translation of the original Japanese claimed priority application. No new matter is added by this change and it is consistent with the remaining portion of the specification and drawings.

Attached is a copy of and English translation of the article in the "Hitachi Hyouron" which is now properly referred to at page 30 based on the above Amendment. The "Hitachi Review" is an English version of Hitachi Hyouron explained in the originally disclosure at page 20. These papers only show the fundamental structure of shearing machines and do not show the above discussed features of Applicants presently claimed invention defined by claims 1, 47 and 49.

Therefore, in view of the distinguishing features between the claimed invention and the references which features are not shown or disclosed by the reference to Funamoto et al., Applicants respectfully request that this application containing claims 1, 2, and 47-49 be allowed and be passed to issue.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #056208.49487US).

Respectfully submitted,

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Vincent J. Sunderdick
Registration No. 29,004

CROWELL & MORING LLP
Intellectual Property Group
P.O. Box 14300
Washington, DC 20044-4300
Telephone No.: (202) 624-2500
Facsimile No.: (202) 628-8844

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